

The Echinoderms Newsletter<sup>1</sup>

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Prepared in the Department of Invertebrate Zoology (Echinoderms),  
National Museum of Natural History, Smithsonian Institution, Washington  
D.C. 20560, U.S.A.

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1978 was quite a year for the echinoderms. There were two international echinoderm meetings. Acanthaster planci made the newspapers again, as a result of its coral chomping activities on various South Pacific islands. American scientists studied sea cucumber culturing techniques in China. In the middle of all this excitement, we neglected to issue a Newsletter. This time, we're six months late. We're sorry about the poor quality of many of the pages in this issue. A bad batch of mimeograph stencils coupled with a temperamental machine caused us some headaches. We hope to do better next time.

We have the impression that our mailing list contains a good deal of "dead wood", names and addresses of people who for one reason or another are no longer interested in receiving the Newsletter. In order to reduce our work load and reduce the cost of production, we want to remove unwanted names from the mailing list. Thus, we ask you to complete and return the enclosed form (see last page of Newsletter) if you wish to have your name retained on the Mailing list. We're sorry to cause you this trouble, but trust you'll understand our aims.

David L. Pawson

Maureen E. Downey

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<sup>1</sup>The Echinoderms Newsletter is not intended to be a part of the scientific literature, and should not be cited, abstracted, or reprinted as a published document.

## Items of interest

### Meetings -

1. David Nichols reports on two highly successful international echinoderms meetings in Nature Vol. 275, 25 September, 1978: 268-270. These were the Third Echinoderms Conference in Sydney, Australia in March 1978, and the meeting at Bedford College, London, in July 1979.

2. A European Colloquium on Echinoderms will take place at the Free University of Brussels on September 3-7, 1979. The Colloquium Organizer, Dr. Michel Jangoux, notes that "although the conference in Brussels will be mainly centered on Europe and the Mediterranean area, it is nonetheless also addressed worldwide and we hope to welcome colleagues from overseas". If you are seriously interested in learning more about the Colloquium, please write to Dr. M. Jangoux, Laboratoire de Zoologie, Faculte des Sciences, Universite Libre de Bruxelles, Avenue F.D. Roosevelt 50 Bruxelles, Belgium.

### Recipes -

Keith Serafy recommends the following sea urchin roe recipes. They were originally published in Sport Diver 1 (2):39-43.

#### 1. Urchin mushroom cream sauce:

half cup urchin roe; 1 can (10.75 ounces) condensed cream of mushroom soup; half cup milk.

Force urchin roe through seive and blend with soup and milk. Heat until boiling, stirring constantly. Pour over hamburgers, chicken or other meats or vegetables. Good served over asparagus and sprinkled with cheese.

#### 2. Urchin mushroom cream dip:

1 cup urchin roe; 1 can (10.75 ounces) condensed cream of mushroom soup.

Force urchin roe through sieve and blend with soup. Use as a dip or spread on crackers for hors d'oeuvres.

#### 3. Raw urchin roe:

add lemon juice or teriyaki sauce.

Bon appetit! (?).

Reprints:

Brendan O'Connor notes that Mortensen's "Handbook of the echinoderms of the British Isles" is being reprinted by:

Cosmos Antiquarian Books, P.O. Box 30, Lochem 6570,  
The Netherlands.

The price will be approximately 20 British pounds.

Requests and Suggestions

Bay-Schmith - would like to learn of techniques for massive culture of sea urchin larvae.

Feral - would like to receive reprints of papers on structure and ultrastructure of the food canal of holothurians, especially apodous forms, and also information on techniques for laboratory maintenance of burrowing marine animals.

Hawkins - would like information on energy budgets of tropical echinoderms.

Mackie - would like copies of papers relating to shape ecology/ adaptive morphology of echinoderms.

Nauen - requests references and papers on growth, conversion rates, food uptake, oxygen consumption of asterioids from various habitats.

O'Connor (B.) - requests any unpublished information on distribution of echinoderms off the Irish coast.

Phelan - would like to have alcohol-preserved specimens of the sand dollar Heliophora with water vessels preserved.

Smith (A.B.) - would like to have copies of bottom photographs from the Indo-west-Pacific showing the echinoid Micropyga tuberculata.

Strathmann - is interested in learning the northern limit of Dendraster excentricus in North America and the southern limit of Echinarachnius parma in North America.

Wolfram - requests information on biology of Paracentrotus lividus in sea grasses.

Webster - requests information on location of collections of any Lower Mississippian crinoids from Montana, Wyoming, Utah, Idaho or Nevada.

### Current Research Projects

- BAY-SCHMITH - Reproduction annual cycle and development of Arbacia spatuligera(Valenciennes, 1846) and Tetrapygus niger (Molina, 1782) in the Bay of Concepcion, Chile.
- BERNASCONI - Ofiuroideos de Sandwich del Sur y de Georgias del Sur.
- BLACK - Asteroid Ecology
- BROADHEAD - Carboniferous Dichocrinidae; Carboniferous/Permian platycrinid column mechanics; Ordovician rhombiferan cystoids and edrioblastoids(with Strimble); Strobilecystites(with Frest)
- DAN - Mechanism of unequal cleavage.
- FENAUX - Bioenergetique oursins et plutei.
- FERAL - Feeding and digestion of the intertidal Leptosynapta from the coasts of Brittany: Structure and function of the gut, digestive enzymes, excretion.  
Beginning of the taxonomy of Holothurians  
Holothurians from Philippines and Kerguelen Islands
- FOSTER - Australian and New Zealand Tertiary echinoids.
- GUILLE - Taxonomy of Ophiuroids from Philippines, Kerguelen, Azores  
Ecophysiology of subantarctic Echinoderms  
Benthic communities of Mediterranean and Kerguelen.
- HAMADA - Reaggregation of disassociated sea urchin embryo. An Ultrastructural and time lapse study.
- HARRIOTT - Distribution patterns, growth rates and reproductive biology of Holothurians of Heron Island reef.
- HAWKINS - Ecological Energetics of Diadema antillarum.
- JARAMILLO - Holothuroidea de los archipiélagos de Chiloe y Los Chonos(Chile); Taxonomia y Biogeografia. Analisis biogeografico de los asteroideos de la plataforma continental chilena.
- KECUGH- Systematics of Asteroids(especially Asterinidae). Role of starfish as predators in subtidal sessile communities of invertebrates.
- KOBAYASHI - Marine Pollution bioassay by sea urchin and Molluscan eggs.

- KOHATSU -- Reproduction and development of seastars.
- MACKEY -- Natural History and Ecology of *Pelaster kubitzi*  
Xentus, adaptive morphology and Behavioral Ecology  
of Pacific Echinoderms.
- MARCUS -- Population Genetics of Arbacia punctulata.
- MARTEL -- Growth of echinoderm skeletons.
- MATSUOKA -- Studies on the starfish Hexose 6-Phosphate dehydrogenase
- MENGE -- Experimental Studies of Community Organization in a  
Tropical Rocky Intertidal Community (Panama)
- MEYER with MACURDA -- Ecology of Indo-West Pacific Crinoides.  
MEYER -- Paleocology of an Upper Ordovician adri-  
asteroid bed.
- MITROVIC -- Problems of echinoderm terminology and nomenclature.
- MUSCAT -- Distribution of echinoderms in S Calif. Right, syno-  
nymy of Amphedonia urtica and A. digitata, ophiuroid  
life history strategies- growth and reproductive  
studies.
- NAUFEN -- Population dynamics of starfish Asterias rubens, Growth  
of Asterias rubens in Kiel Bay, role in the ecosystem
- NOJIMA -- Ecology of Asteroids
- O'CONNOR -- The distribution of echinoderms around Ireland. A  
bibliography of works on Echinoderms occurring off  
the Irish Coast
- OGURO -- Development of Asteroids.
- PAGETT -- Hydraulics of Asteroides. Salinity tolerance and min-  
eral metabolism in Ophiuroids.
- PHILAN -- Function of the echinoid compasses, peripharyngeal  
membrane, and "gills" (compensating organs).
- PROKOP -- The Family Hemmerinidae Bassler, 1938 (Crinoides in  
the Devonian of Bohemia.
- ROMAN -- Echinides du Cretace superieur et du Paleocene du  
Sahara algerien.

- ROUX - Fossil and recent Crinoidea, Articulata. Isocrinids of the west Atlantic (With Macurda) Metacrinus from the Phillipine Islands, Stem joints of the Hyocrinidae Comparative ecology between recent and fossil stalked Crinoidea, Articulata.
- SMITH - Functional morphology of the echinoid test; quantitative analysis of the stereon lattice structure: functional classification of ambulacral pores.
- SPRINKLE - Echinoderm faunas from the Bromide formation (Middle Ordovician) of Oklahoma (with seven other workers); late Cambrian Echinoderms from se Missouri (with Strimble); Middle Cambrian Echinoderms from the Rocky Mountains.
- STANCYK - Regeneration in amphiuroid ophiuroids: Life history pattern of South Carolina Ophiothrix angulata: Disk regeneration in amphiuroid ophiuroids
- STRIMBLE - Late Mississippian batocrinids: the genus Lecythiocrinus; the genus Agassizocrinus: The genus Paragassizocrinus (with Fritzensohn); Ordovician echinoderm studies Pennsylvania microcrinoids; Permian crinoids of the Glass Mountains; Upper Pennsylvanian crinoids (with Pabian); Upper Cambrian (Davis Formation) echinoderms (with Sprinkle).
- TAKASHIMA - Oogenesis, Ultracytochemistry.
- TEGNER - Natural history and Population dynamics of Strongylocentrotus purpuratus and the commercially exploited S. franciscanus; Sea urchin-abalone competition; Experimental attempts to determine the scientific and economic feasibility of enhancing depleted world populations of abalones.
- THANDAR - Holothurian fauna of South Africa
- TORTONESE - Echinoderms from Indian Ocean: Somaliland Asteroids of the Genus Echinaster.
- URBINA - Sinopsis sistematica de la familia cucumariidae en Chile y Estudio anatomico e histologico de Athyonidium chilensis (Semper) 1877 (Holothuroidea, Thynidiidae, Cucumariidae)
- URBINA-JARAMILLO - Holothuroidea de los Archipiélagos de Chiloé y Chonos: Taxonomia y Biogeografía.
- WALENFAMP - Systematical and ecogeographical study of the Echinodermata of the Guyanas and Dutch Antilles.

WEBSTER - Lower Mississippian faunas of Nevada, Utah and Montana;  
Jurassic crinoids of the Himalayas (with Gupta):  
Pennsylvanian and Permian crinoids of the SW U.S.A.

YULIN - Echinoderm fauna of the continental shelf of East China  
Sea.

WOLFE - Ecology and distribution of Schizostella.

WOLFRAM - Biology and distribution patterns of the Mediterranean  
sea urchins, Paracentrotus lividus, Ambacia lixula and  
Psammechinus miliaris in sea-grass meadows around Ischia  
Island, Gulf of Naples.

and also -

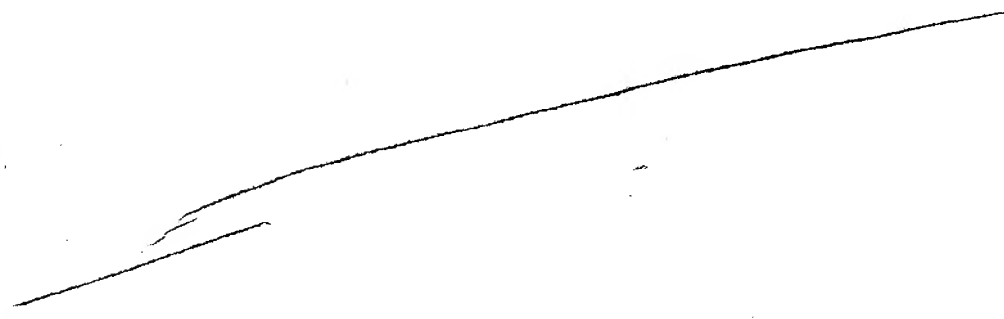
GALLEMI - Upper Cretaceous echinoids of Catalonia, Spain.

HILLIS-COLINVAUX - Echinoderm grazing on calcareous algae coral  
reefs in Jamaica.

POSTMES & BROERTJES - Gonad cycle of Asterias.

SCHEIBLING - Studies on feeding behavior of Oreaster reticulatus.

WELCH - Mississippian echinoderms of Montana. Pennsylvanian  
crinoids from algal banks in the Illinois Basin.





Directory of Echinoderm Specialists  
Address Changes

Belyaev, G.-P.F. Shirshov Inst. of Oceanology, Academy of Sci.  
of the USSR, 23 Krasikov Street, Moscow 117218

Corry, Barabara G.- 3355 Maplewood Rd., Victoria, B.C., Canada  
V8P 3M9

Cunningham, C.L.B.- 1862 Pullman St., San Pablo CA 94806

Dan, Katsuma- Francisco Villa, 3-19-8 Kami-Yoga, Setagaya-ku,  
Tokyo 158, Japan

Guille, Alan-Museum National d'Histoire Naturelle, Laboratoire  
de biologie de Invertebre Marins, 55 Rue Buffon,  
75005 Paris France

Hamada, Spencer Hiroshi- Cell and Developmental Biology;  
Fordham University, Bronx, New York, 10458.

Hotchkiss F.H.C.- 153 Dunhams Corner Rd., East Brunswick, N.J.  
08816

Mackie, Steve A.- Dept. Ecology and Evolutionary Biology, Univ.  
of Arizona, Tucson, Arizona 85721

Macurda, D.Bradford Jr.- Exxon Production Research Corp., P.O.  
Box 2180, Houston, Texas 77001

Marcus, Nancy H.-Woods Hole Oceanographic Inst., Woods Hole,  
Mass. 02543.

Millendorf, Steven A.- P.O. Box 60252, SLED, Rm. 1047, New Or-  
leans, LA 70160

Mironov, A.- P.P. Shirshov Institute of Oceanology, Academy of  
Science of the USSR, 23 Krasikova Street, Moscow  
117218

Nauen, O.E.- Institut fur Meereskunde Duesternbrooker, Weg 20,  
2300 Kiel Fr Germany

Regis, Marie B.- Berth Laboratory of Zoology, Marine Faculty of  
Sciences and Techniques, St. Jerome, Rue Henri Poincare  
16697 Marseille, Cedex 7 France



Tortonese, Enrico- Istituto Zooprofilattico Lungo Bisagno  
Dalmazia, 45A-16141 Genova Italy

Thompson, Geoffrey B.-Fisheries Research Station, 100A Shek  
Pai Wan Road, Aberdeen, Hong Kong

Yanaguchi, M.-Dept. of Marine Sciences, Univ. of the Ryukyus,  
Shuri, Naha, Okinawa 903 Japan.

Requests, etc.

Roland Emson and Iain Wilkie are preparing a review of fission and autotomy in echinoderms for publication in the near future. They are interested in learning of any obscure publications dealing with this topic, descriptions of unpublished work and also of work in progress.

Directory of Echinoderm Specialists  
Supplement 3, August 1978

- Barker, M.F.- Zoology Dept., University of Auckland, Private Bag., Auckland, New Zealand.
- Bay-Schmith, B. Enrique,- Depto. de Biología Celular, Instituto de Biología, Universidad de Concepción, Casilla 1367, Concepción, Chile.
- Black, Robert- Zoology Department, University of W.A., Nedlands, Western Australia.
- Cannon, Lester- Curator of Lower Invertebrates, Queensland Museum, Brisbane, Queensland, Australia.
- Dei, Teruo- Amakusa Mar. Biol. Lab., Kyushu Univ. Tomioka, Reihoku-cho, Amakusa, Kumamoto 863-25 Japan.
- Emerson, Ian- Junior Division Biology, Memorial University of Newfoundland, St. John's, Nfld., Canada A1B 3X9
- Fankboner, Peter V.- Dept. of Biological Sciences, Simon Fraser University, Burnaby, B.C., Canada
- Feral, Jean-Pierre- Museum national d'histoire naturelle Lab. de Biol. des invertébrés marins et Malacologie, 55 Rue du Buffon, 75005 Paris France
- Fernandez, Carol- P.O. Box 54, Rock Sound, Eleuthera, Bahamas.
- Franklin, Sue- Zoology Dept., Sydney University, Sydney, Australia
- Green, Katherine A.- P.O. Box 13204, El Paso, Texas 79912.
- Harriott, Vicki- Zoology Department, University of Queensland, St. Lucia, 4068 Brisbane, Australia.
- Hidaka, Michio- Zoological Inst. Faculty of Science, Univ. of Tokyo, Hongo, Tokyo, 113 Japan
- Jaramillo, E.- Instituto de Zoología, Calilla 567, Universidad Austral de Chile, Valdivia, Chile
- Keough, M.J.- The University of Adelaide, G.P.O. Box 498, South Australia 5001
- Kikuchi, Taij- Amakusa Mar. Biol. Lab., Kyushu Univ., Tomioka, Reihoku-cho, Amakusa, Kumamoto, 863-25 Japan

Lane, J. (Moss)- Route 2, Box 228, Pensacola, Fla. 32506

Lubchenco, J.- Dept. of Zoology, Oregon State University, Corvallis, OR

Maeda, Ryuichiro- Zoological Institute, Faculty of Science, University of Tokyo, Hongo, Tokyo 113 Japan

Marshall, Jan- Dept. of Marine Invert. The Aust. Museum, 6-8 College Street, Sydney, NSW 2000 Australia

Martin, R.B. Zoology Dept. Univ. of Queensland, St. Lucia, 4067, Q'ld, Australia

Miller, John E.- Harbor Branch Foundation, North Old Dixie Hwy, Route 1, Box 196, Ft. Pierce, Fla. 33450

Mitrovic, Jovanka Petrovic- 11000 Beograd, 14 Decembra 82, Yugoslavia

Mladenov, Philip- Banfield Marine Station, Banfield, Vancouver Is. B.C., Canada.

Morgan, Scott R.- Department of Geological Sciences University of California, Riverside, CA 92521

Muscat, Ann Marie- Dept. of Biological Sciences, University of Southern California, University Park, Los Angeles, CA 90007

Nojima, S.- Amakusa Marine Biological Laboratory, Kyushu Univ. Tonfoka, Reihoku-cho, Amakusa, Kumamoto 863-25 Japan

Norinasa, Matsuoka-(and Kunio Tanahashi) Dept. of Zoology, Faculty of Science, Hokkaido University, Sapporo 060 Japan

Padgett, Richard- Zoology Dept., Royal Holloway College (Univ. of London) Englefield Green, Surrey, U.K.

Pearson, Bob-Northern Fisheries Station, Queensland Fisheries Service, 9 Knight St., Cairns 4870 Queensland, Aust.

Percy, Jon- Arctic Biological Station, Environment Canada, Fisheries and Marine Service, P.O. Box 400, Ste. Anne de Bellevue, P.Q. H9X 3L6 Canada

Pires, Teresa Christina- Depto. de Zool. do Instituto de Biol. UFRJ, CCS sala A1-117, Cidade Universitaria, Ilha do Fundao, Rio de Janeiro, R.J., 20.000, Brasil

Presteldle, Geoffrey, K.- 16 Geeves Cres. Midway Pt., Tasmania,  
7171 Australia

Scheibling, R.- Marine Sciences Centre, McGill University, 772 .  
Sherbrooke Street, West Montreal, Quebec, Canada H3A 1G1

Sides, E.M.- P.O.Box 35, Discovery Bay, St. Ann, Jamaica

Silver, Howard- Department of Zoology, University of Queensland,  
St. Lucia, Brisbane, Queensland, Aust. 4067

Simpson, R.D.- Health Physics Research, A.A.E.C. Private Mail Bag,  
Sutherland, NSW 2232, Australia.

Stoepplewerth, Douglas E.- Belle W. Baruch Institute for Marine  
Biology and Coastal Research, University of South Carolina,  
Columbia, S.C. 29208.

Tegner, Mia Jean- Scripps Institution of Oceanography, A001, La  
Jolla, California 92093

Thompson, Kathleen(Woolley)- RR#1, Inlet Drive, Mill Bay, B.C.  
V0R 2P0 Canada

Urbina, Bergos Medardo- Seccion de Historia Natural, Museo de  
Concepcion, casilla 1054, Concepcion, Chile

Vasu, B.S.- Dept. of Biology, Chico State Univ., Chico Calif.

Walenhamp, T.H.C.- Ryksmuseum van Natuurlyke Histoire, Raam-  
steeg 2, Leiden, Holland

Warren, Lew- Darwin Community College, Dripstone Rd., Casuarina  
Darwin, N.T. 5795, Australia

Wolfram, Tertschinig- 1. Zoolog. Institut, Universitat Wien,  
Lehrkanzel fur Meeresbiologie, Wien, Austria.

## Recent Publications and Papers in Press

This list is based upon Newsletter replies plus reprints received. It includes papers published in 1975 or later. Please note that many of the papers listed below as "in press" will already have been published.

BAKER, A.N., 1977. Some Deep-Sea Ophiuroidea from New Zealand. Records of the National Museum of New Zealand, Vol.1 No.10, pp.149-160.

BARANOVA, Z.I.(ed.), 1977. Systematics, Evolution, Biology and Distribution of Recent and Fossil Echinoderms. Academy of Sciences of the USSR, Zoological Institute.

BAREL, C.E.W. and P.G.W. KRAMERS, 1977. A survey of the Echinoderm Associates of the Northern Atlantic Area. Zoologische Verhandlungen 156:1-159.

BAY-SCHMITH, E. and C. JANA, 1977. Balanus tintinnabulum concinnus Darwin, 1854, epibionte poco comun del erizo negro Tetrapigus niger(Molina, 1732). Boletín de la Sociedad de Biología de Concepción. 51 (in press)

BELL, B.M., 1977. Respiratory Schemes in the Class Echinoasteroidea. Paleontology 5(3): 716-732.

\_\_\_\_\_ and J. SPRINKLE, 1978. Totiglobus an unusual new Echinoasteroid from the Middle Cambrian of Nevada. Journal of Paleontology 52(2): 243-266.

BELYAEV, G.M. and N.M. LITVINOVA, 1977. The Second Finding of Deep-Sea Starfishes of the Family Caymanostellidae. Transactions of the P.P. Shirshov Institute of Oceanology, 12: 1893-1896.

\_\_\_\_\_ and A.M. MERONOV, 1977. Bottom fauna of the deep sea trenches western part of the Pacific: Holothuroidea of the genus Myriotrochus from the deep-sea trenches of the Pacific Ocean. Ibid. 108:7-24 and 165-172.

BERNARDINI, I. and M.M. D'AGOSTINO, 1977. Ophiuroideos del Mar Epicontinental Argentino. Revista del Museo Argentino de Cs. Nat. Hidrobiología 5:65-114.

\_\_\_\_\_ and \_\_\_\_\_ (in press). Nuevas especies de Ophiuroidea Antártico, Ophiomastus trispinosus sp.(Ophiuroidea, Ophiuridae).

BINYON, J., 1977. Some chemical and environmental Observations upon two species of South African Asteroids. South African J. of Science. 73: 146-147.

\_\_\_\_\_, 1978. Some Observations upon the Chemical Composition of the Starfish Asterias rubens L. with Particular Reference to Strontium uptake. J. mar. Biol. Ass. U.K. 58: 441-449.

BROADHEAD, T.W., 1978. The Ordovician cystoid Amecystis cordiformis Sinclair. Canadian Jour. Earth Sci., 15(1) in press.

\_\_\_\_\_ and E.L. Strimple, 1977. Permian platycrinid crinoids from Arctic North America. Ibid. 14:1166-1175.

\_\_\_\_\_ and \_\_\_\_\_, 1978. Systematics and Distribution of the Callocystitidae (Echinodermata, Rhombifera). Jour. Paleo. 52(1): 164-177.

BUCKLAND-NICKS, J.A. And F.S. CHIA, 1977. On the Nurse Cell and the Spermatzeugma in Littorina sitkana. Cell. Tiss. Res. 179:347-356

CARNEY, R.S. and A.G. CAREY JR., 1976. Distribution pattern of holothurian on the Northeastern Pacific (Oregon, U.S.A) continental shelf slope, and abyssal plain. Thalassia Jugoslavica 12(1): 67-74.

CASO, M.E., 1975. Contribucion al Estudio de Los Asterozoa de Mexico. La Familia Mithrodiidae. Descripcion de Una Nueva Especie del Genero Mithrodea. Mithrodia enriquecasoi sp. nov. An. Centro Cienc. del Mar. y Limnol. Nal. Auton. Mexico 2(1): 1-28.

\_\_\_\_\_, 1976. El Estado Actual Del Estudio de Los Equinoderms de Mexico. An. Centro Cienc. del Mar y Limnol. Univ. Nal. Auton. Mexico, 3(1): 1-56.

CHIA, F.S., 1977. Scanning Electron Microscopic Observations of the Mesenchyme Cells in the Larvae of the Starfish Pisaster ochraceus. Acta zool. (Stockh.) 58:45-51.

\_\_\_\_\_, 1977. Structure and Function of the Genital Papillae in a Tropical Sand Dollar, Arachnoides placenta (L.) with a discussion on the adaptive significance of genital papillae in echinoids. J. exp. mar. Biol. Ecol. 27:187-194.

- COHEN, D.M. and D.L. PAXSON, 1977. Observations from the DSRV ALVIN on Populations of Benthic Fishes and Selected Larger Invertebrates in and near DWD-106. Baseline Report of Environmental Conditions in Deepwater Dumpsite 106. NOAA Dumpsite Evaluation Report 77-1(II): 423-450.
- CRAPP, G.B. and M.E. WILLIS, 1975. Age Determination in the Sea Urchin Paracentrotus lividus (Lamarck), with Notes on the Reproductive cycle. J. exp. mar. Biol. Ecol. 20: 157-178.
- CUTRESS, B.M., 1976. A New Prionocidaris (Echinodermata: Echinoidea) from the Middle Miocene of Florida. Proc. Biol. Soc. Wash. 89(2):191-193.
- DAN, K. and M. NIGUCHI, I. UEMURA, in press. Studies on unequal division in sea urchin embryos. Inequality of ribosomal content in "Mechanism of Cell Change," John Wiley.
- DAYTON, P.K. and J.S. OLIVER, 1977. Antarctic Soft-Bottom Benthos in Oligotrophic and Eutrophic Environments. Science, Vol. 197: 55-58.
- \_\_\_\_\_, R.J. ROSENTHAL, L.C. MAHEN, AND T. ANTEZANA, 1977. Populations Structure and Foraging Biology of the Predaceous Chilean Asteroid Meyenaster gelatinosus and the Escape Biology of its Prey. Marine Biology 39:361-370.
- DEARBORN, J.H., 1977. Foods and Feeding Characteristics of Antarctic Asteroids and Ophiuroids. in Adaptations Within Antarctic Ecosystems. Smithsonian Institution. 293-326
- \_\_\_\_\_, and F.J. FELL, 1974. Ecology of Echinoderms from the Antarctic Peninsula. Antarctic Journal of the United States 9(6): 304-306.
- DEWITT, H.H., 1976. ARA Islas Orcadas cruise 51. Antarctic Jour. June 1976.
- \_\_\_\_\_, and J.D. MCCLEAVE AND J.H. DEARBORN, 1976. Ecological studies of fishes and echinoderms during ARA Islas Cruise. IBID
- DIX, T.G., 1977. Survey of Tasmanian Sea Urchin Resources. Tasmanian Fisheries Research 21:1-14.
- \_\_\_\_\_, 1977. Reproduction in Tasmanian Populations of Helicidaris erythrogramma (Echinodermata: Echinometridae) Aust. J. Mar. Freshw. Res. 28: 509-520.



DOI, TERUO, 1976. Some aspects of feeding ecology of the sea stars genus Astropecten. Pub. from the Amakusa Marine Biological Laboratory, Kyusu University 4(1): 1-19.

DOWNNEY, M.E. AND G.M. WELLINGTON, Rediscovery of the Giant Seastar Ludia superba A.H. Calrk in the Galapagos Islands. Bull. of Marine Science 28(2):375-376

ETERSON, C.J., 1977. Larval Development of the Sea Star, Leptasterias polaris, with particular reference to the optic cushion and ocelli. Scanning Electron Microscopy/IITRI Vol.II:631-638.

ENGEL, H., 1976. On a New Echinid from Cretaceous of a Maastricht: Scutellina Supramarginalis (Echinoidea, Gnathostomata, Clypeasteroidea, Laganida, Fibulariidae) Bull. Zool. Mus. Univ. van Amsterdam, 5(7):55-57

FANKBONER, P.V. 1978. Suspension-Feeding Mechanisms of the Armoured Sea Cucumber Psolus Chitinoidea Clark. J. exp. mar. Biol. Ecol. 31: 11-25.

FECHTER, H., 1977. Über den Funktionalen Zusammenhang Zwischen Populationsdichte, Ausbreitungsvermögen und Fangmenge bei Bodenfallen. Spixiana 1,1,3-15.

FEMAUX, L., G. MALARA and R.CHARRA, 1975. Effets d'un jeune de courte duree sur les principaux constituants biochimiques de l'oursin Arbacia lixula. I. Stade de repos sexuel. marine Biology 30:239-244.

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\_\_\_\_\_, C. CULLARIO, AND I. PALAZZOLI, 1977. Evolution des constituants biochimiques des principaux compartements de l'oursin Arbacia lixula(L) au cours d'un cycle sexuel et effets d'un jeune de courte duree au cours de la maturation sexuelle. J. exp. mar. Biol. Ecol. 28:17-30.

FERBER, I., 1977. Marine Invertebrates Collections"Biota of the Red Sea and Eastern Mediterranean". Dept. of Zool., Zool. Mus. Hebrew University of Jerusalem.

FRANZEN, C., 1977. Crinoid holdfasts from the Silurian of Gotland Lirhaia 10: 219-234.

FREST, T., 1977. Cyathocrinites from the Silurian(Wenlock) Strata of Southeastern Indiana. Fieldiana Geology, 35(7):109-136

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and H.L. STRIMPLE, 1977. The taxonomic status of Poteriocrinus(Scaphiocrinus)maedani(M&W, 1873) Jour. Paleo 51 : 860-864.

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